

LET'S DESIGN  
A DATABASE!

# DESIGN STEP 1 - DEFINE OBJECTS

- Start by defining your objects. Go through the requirements and decide what parts of the system should be your main objects. Don't worry about how the objects relate to each other yet - just focus on what objects you will need.
- When your objects seem fairly complete, think about how they relate to each other. Some of your objects will be entities that are central to the problem you are trying to solve, while others will be used to support those entities. You may even decide some objects aren't actually needed.

# DESIGN STEP 2 - IDENTIFY TABLES AND COLUMNS

- Major entities will usually translate into database tables. Each one will have attributes, which will become the table columns.
- You will need to decide how your entities will be broken into tables and what attribute columns each table will have. This is where some of the normalization techniques we discussed might be used. You will need to consider:
  - The information you will want to get from the database.
  - How that information will be used.

# DESIGN STEP 3 - DEFINE TABLES

- Decide what column names and data types each table will have.
- Write the DDL script that will create the tables you have designed in the database.

USE DRAW.IO TO  
DIAGRAM YOUR TABLES AND  
RELATIONSHIPS WHILE  
DESIGNING

# DESIGN ACTIVITY

Work with your group to come up with a good design for the data listed here.

We'll reconvene in about 15 minutes to review everyone's designs and decide on a final design.

## Gallery Customer History Form

Customer Name

Jackson, Elizabeth  
123 – 4<sup>th</sup> Avenue  
Fonthill, ON  
L3J 4S4

Phone (206) 284-6783

### Purchases Made

Artist	Title	Purchase Date	Sales Price
03 - Carol Channing	Laugh with Teeth	09/17/2000	7000.00
15 - Dennis Frings	South toward Emerald Sea	05/11/2000	1800.00
03 - Carol Channing	At the Movies	02/14/2002	5550.00
15 - Dennis Frings	South toward Emerald Sea	07/15/2003	2200.00

The Gill Art Gallery wishes to maintain data on their customers, artists and paintings. They may have several paintings by each artist in the gallery at one time. Paintings may be bought and sold several times. In other words, the gallery may sell a painting, then buy it back at a later date and sell it to another customer.